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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,155	07/11/2001	Chul-Han Bae	P56432	8793

7590 04/25/2003
Robert E. Bushnell
Suite 300
1522 K. Street, N.W.
Washington, DC 20005

EXAMINER

COLON, GERMAN

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,155

Applicant(s)

BAE ET AL. 

Examiner

German Colón

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,9,11-13 and 15-26 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,10,14,18,19 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

1. On Page 8, lines 8, Figs. 6 and 7 are grouped in the brief description of the drawings, such grouping of figures is not appropriate since each figure needs to have a separate brief description. See MPEP 608.01(f).
2. On Page 13, line 11, a reference to "dummy bridges 83' " is made. However, in Fig. 9, such numeral represents real bridges on the dummy bridge region.

Appropriate correction is required.

Claim Objections

3. Claim 18 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 17. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 8-11, 16-20, and 21-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 16 and 21 recite the limitation "the extending strip" and "the facing strip" in lines 3-4, lines 6-7, and lines 6-7, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the dummy bridge *regions*" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 9-11, 17-20, and 22-26, claims 9-11, 17-20 and 22-26 are rejected over the reasons stated in claims 8, 16, and 21, because of their dependency status from claims 8, 16 and 21, respectively.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (US 5,523,647) in view of Inoue et al. (US 2001/0020817).

Regarding claim 1, Kawamura discloses a tension mask frame assembly of a color CRT, comprising:

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a tension mask **8** including a plurality of parallel strips **8e** spaced apart at predetermined intervals from each other and a plurality of real bridges **8f** connecting adjacent strips to each other to form slots through which electron beam pass;

a frame (see Fig. 2) for supporting said tension mask accommodating a tensile force applied to said tension mask in the direction of the strips (see Col. 2, line 56); and

at least one damper (see Fig. 2) installed on the frame and contacting the strips of the tension mask.

Kawamura is silent regarding the limitation of "the number of real bridges decreasing in a direction from the center portion of said mask to the peripheral portion of said tension mask". However, in the same field of endeavor, Inoue discloses a shadow mask where the number of real bridges decreases from the center portion of said mask to the peripheral portion (see Figs. 1, 6, 7 and 9) in order to avoid deformation due to external shock during a manufacturing process, during transportation or due to heating during operation, thus diminishing a lowering of color reproducibility and a lowering of picture quality (see paragraphs [0015], [0021] and [0022]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Inoue's teachings of reducing the number of real bridges from a central portion of the mask to a peripheral portion to avoid deformation due to external shock during a manufacturing process, during transportation or due to heating during operation, thus diminishing a lowering of color reproducibility and a lowering of picture quality.

Regarding claim 2, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

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Referring to claim 15, Kawamura-Inoue discloses the number of real bridges decreasing in an X-direction, perpendicular to the length of the strips (see '817, Figs. 1, 6, 7 and 9).

8. Claims 5, 6, 8, 9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura-Inoue as applied to claim 1 above, and further in view of Ohmae (US 6,388,370).

Regarding claim 5, Kawamura-Inoue discloses the claimed invention except for the limitation of "a plurality of dummy bridges between two real bridges". However, in the same field of endeavor, Ohmae discloses a shadow mask with dummy bridges between two real bridges with the purpose of reducing the doming effect and suppressing the occurrence of moiré stripes, improving the image quality (see Col. 2, lines 30-34). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide dummy bridges between two real bridges in order to reduce the doming effect and suppressing the occurrence of moiré stripes, improving the image quality.

Referring to claim 6, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

Referring to claim 8, Kawamura-Inoue-Ohmae discloses a tension mask with a dummy bridge region including a plurality of dummy bridges extending from adjacent strips, not contacting said adjacent strips.

Referring to claim 9, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

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Regarding claim 11, Kawamura-Inoue-Ohmae discloses the strips having the dummy bridge region comprising real bridges.

Regarding claim 12, Kawamura-Inoue-Ohmae discloses the mask comprising a peripheral region including a slot defined by strips.

Regarding claim 13, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

Referring to claim 16, Kawamura-Inoue-Ohmae discloses a tension mask frame assembly of a color CRT, comprising:

a tension mask including a plurality of parallel strips spaced apart at predetermined intervals from each other, a real bridge region having real bridges connecting adjacent strips to each other to form slots through which electron beam pass, the real bridge region being located at the center of said tension mask, and a dummy bridge region having a plurality of dummy bridges extending from adjacent strips, not contacting said adjacent strips, the dummy bridge region located on the peripheral portion of the tension mask;

a frame for supporting said tension mask accommodating a tensile force applied to said tension mask in the direction of the strips; and

at least one damper installed on the frame and contacting the strips of the tension mask.

Same reasons for combining stated in claim 5 applies.

Referring to claim 17, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

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Referring to claim 20, Kawamura-Inoue-Ohmae discloses the strips having the dummy bride region comprising real bridges, the number of real bridges decreases from the center portion of said mask to the peripheral portion.

Regarding claim 21, Kawamura-Inoue-Ohmae discloses a tension mask frame assembly of a color CRT, comprising:

a tension mask including a plurality of parallel strips spaced apart at predetermined intervals from each other, a real bridge region having real bridges connecting adjacent strips to each other to form slots through which electron beam pass, the real bridge region being located at the center of said tension mask, a dummy bridge region having a plurality of dummy bridges extending from adjacent strips, not contacting said adjacent strips, the dummy bridge region located on the peripheral portion of the tension mask, and a grille region having a slot defined by strips (see '647, Col. 2, lines 66-67), said region located at the outer side of the dummy bridge region;

a frame for supporting said tension mask accommodating a tensile force applied to said tension mask in the direction of the strips; and

at least one damper installed on the frame and contacting the strips of the tension mask.

Same reasons for combining stated in claim 5 applies.

Regarding claim 22, Kawamura discloses at least one damping wire having both ends secure to the frame, contacting each of said strips (see Fig. 2).

Regarding claim 24, Kawamura-Inoue-Ohmae discloses the strips having the dummy bride region comprising real bridges.

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Referring to claim 25, Kawamura-Inoue-Ohmae discloses the strips having the dummy bridge region comprising real bridges, the number of real bridges decreases from the center portion of said mask to the peripheral portion.

Referring to claim 26, Kawamura-Inoue-Ohmae discloses the strips in the aperture grille region being connected to each other by real bridges (see '647, Col. 2, lines 66-67).

Allowable Subject Matter

9. Claims 3, 4, 7, 10 and 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 19 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

The Examiner notes that the Prior Art of Record discloses a tension mask frame assembly of a color CRT, comprising: a tension mask including a plurality of parallel strips spaced apart at predetermined intervals from each other, a real bridge region having real bridges connecting adjacent strips to each other to form slots through which electron beam pass, the real bridge region being located at the center of said tension mask, and a dummy bridge region having a plurality of dummy bridges extending from adjacent strips, not contacting said adjacent strips,

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the dummy bridge region located on the peripheral portion of the tension mask; a frame for supporting said tension mask accommodating a tensile force applied to said tension mask in the direction of the strips; and at least one damper installed on the frame and contacting the strips of the tension mask.

Regarding claim 3, the References of the Prior Art fail to teach or suggest the combination of the limitations as set forth in claim 3, and specifically comprising the limitation of "the damper being made of two damper wires, one end secure to the tension mask and the other being secured to the frame".

Regarding claims 7, 10, 14, 19 and 23, claims 7, 10, 14, 19 and 23 would be allowable for the same reasons given in claim 3.

Referring to claim 4, the References of the Prior Art fail to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation of "the number of real bridges connecting with an end strip being at most one".

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Lerner, in US 5,394,051, discloses a vibration-damping configuration in a strip shadow mask.

Ito et al., in US 5,672,935, discloses a tension mask with two damping wires.

Chun et al., in US 2002/0117955, discloses a shadow mask with a real bridge region and a dummy bridge region.

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Kobayashi et al., in US 2002/0014821, discloses a shadow mask with a grille peripheral area.

Ono, in US 6,372,058, discloses a semi-tension mask with a damper line.

Contact Information

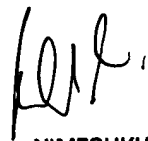
Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AC
gc

April 18, 2003



NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800